

$$\begin{aligned}
 (x^{-2}y^3)^2(3^1x^1y^0)^3 &= \boxed{3} \boxed{^1} \cancel{X} \cancel{X} \cancel{X} \\
 &= (x^{-4}y^6)(3^3x^3y^0) = \frac{\cancel{X} \cancel{X} \cancel{X} \cancel{X}}{3^3=27} \\
 &= \frac{y^6 \cdot 27 x^3}{x^4} = 27 \frac{y^6 x^3}{x^4} = 27 y^6 x^{3-4} =
 \end{aligned}$$

$$= 27 y^6 x^{-1} = 27 \frac{y^6}{x}$$

$$(28) \quad (2x^2y^{-2})(-x^2y')^3 =$$

$$x^a \cdot x^b = x^a$$

$$(x^2)^3 = x^6$$

$- + - \rightarrow -$

$$= 2 \underline{x^2} \underline{y^{-2}} (- \underline{x^6} \underline{y^3}) =$$

$$= 2x^{2+6} y^{-2+3} = -2x^8 y$$

$$3=3'$$

$$\left( \frac{3^1 x^2 y^{-2}}{5^1 x^2 y^1} \right)^2 = \frac{3^2 x^4 y^{-4}}{5^2 x^4 y^2}$$

$$\begin{aligned} (X^2)^4 &= X^8 \\ X^2 \cdot X^4 &= X^6 \end{aligned}$$

$$= \frac{9 x^{4-4}}{25} y^{-4-2} = \frac{9 x^0 y^{-6}}{25} = \boxed{\frac{9}{25 y^6}}$$

$$y^{-6} = \frac{1}{y^6}$$

$$\frac{1}{y^{-6}} = y^6$$

21/5/21

Ch. 10.5 INDEPENDENT EVENTS p. 660

PROBABILITY OF INDEPENDENT  
EVENTS IF AND ONLY IF

$$P(A \text{ AND } B) = P(A) \times P(B)$$

OTHERWISE, A AND B ARE  
DEPENDENT EVENTS.

p. 662 # 7-12

$$P(A) = 0.5 \quad P(B) = 0.25 \quad P(C) = 0.75$$

$$P(D) = 0.1$$

$$\textcircled{1} \quad P(A \text{ and } B) = P(A) \cdot P(B) =$$

$$= 0.5 \cdot 0.25 = 0.125 \quad \underline{12.5\%}$$

ONE HUNDRED TWENTY FIVE  
THOUSANDTH

$$\frac{125}{1000} = \frac{1}{8}$$

$$\textcircled{8} \quad P(A \text{ AND } C) = 0.5 \cdot 0.75 = 0.375$$

37.5%

$$\frac{375}{1000} = \frac{3}{8}$$

$$\textcircled{9} \quad P(C \text{ AND } B) = 0.75 \cdot 0.25 =$$

18.75%

$$= 0.1875$$

ONE THOUSAND EIGHT HUNDRED  
SEVENTY FIVE <sup>TEN</sup> THOUSANDTH

$$\begin{array}{r} 18.75^\circ | \\ \hline 0.1875 \end{array}$$

$$\frac{1875 \div 125}{10000 \div 125} = \frac{15 \div 5}{80 \div 5} = \frac{3}{16}$$